

New or Little-Known Crane Flies from Iran II (Diptera: Tipulidae)¹

CHARLES P. ALEXANDER
AMHERST, MASSACHUSETTS 01002

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Abstract: The initial part of this short series of papers concerning the crane flies of Iran was published in this *Journal* **82**: 279, 1974 and concerned the tribe Pediciini. At this time I am discussing the Eriopterine genus *Gonomyia* and provide descriptions of seven undescribed species, *Gonomyia (Idiocera) curticurva*, *G. (I.) laterospina*, *G. (I.) orthophallus*, *G. (I.) spinistylata*, *G. (Gonomyia) basilobata*, *G. (G.) elburzensis*, and *G. (G.) oxybeles*, from the Elburz Mountains in northern Iran.

As was discussed in the first part under this title the large series of Tipulidae from northern Iran was collected by Dr. Fernand Schmid in 1955 and 1956 and added greatly to the then poorly known Iranian crane fly fauna. I am very indebted to Dr. Schmid for his efforts in making known the Tipulidae of virtually all of southern Asia. The types of the new species are preserved in the Alexander collection.

Gonomyia (Idiocera) curticurva, n. sp.

Mesonotal praescutum with three gray stripes, interspaces with two long pale brown lines, pleura light brown above, below chiefly yellow; femora yellowed with a narrow pale brown nearly terminal ring; wings faintly darkened, prearcular and costal regions pale yellow, stigma pale brown; *Sc* short, *Sc*₁ ending opposite origin of *Rs*, *Sc*₂ far retracted; *m-cu* more than its length before fork of *M*; male hypopygium with three dististyles, all terminating in blackened points; apex of aedeagus a very small curved hook.

Male. Length about 4 mm; wing 5 mm. Rostrum dark brown; palpi black. Antennae with scape brown, pedicel yellow, flagellum brownish black. Head with anterior vertex yellow, posterior vertex gray.

Pronotum brownish gray, scutellum and sides of scutum light yellow. Mesonotal praescutum with three gray stripes, the interspaces appearing as two long pale brown lines, pseudosutural foveae darkened; scutum gray, lobes slightly infuscated, posterior angles yellowed; scutellum obscure yellow; postnotal mediotergite brownish gray, pleurotergite light brown with a yellowed spot. Pleura light brown dorsally, sternopleurite and posterior sclerites yellow, ventral sternopleurite pale brown. Halteres with stem obscure yellow, knob pale brown. Legs with coxae yellow, bases of fore and middle pairs pale brown; trochanters yellow; femora yellowed, with a narrow pale brown nearly terminal ring; tibiae and basitarsi yellow, apices darkened, remainder of tarsi pale brown. Wings faintly darkened, prearcular and costal regions pale yellow; stigma light brown. Longitudinal veins beyond general level of origin of *Rs* with trichia, more sparse on vein *R*₃ and tips of

¹Contribution from the Entomological Laboratory, University of Massachusetts.

the Anals. Venation: Sc short, Sc_1 ending opposite origin of R_5 , Sc_2 far retracted, Sc_1 and R_5 subequal in length; distance on costa between R_{1+2} and R_3 about one-third the length of the latter; $m-cu$ more than its length before the fork of M .

Abdominal tergites brown, sternites paler; hypopygium brownish yellow. Male hypopygium (Fig. 2) with outer lobe of basistyle, b , long, vestiture relatively short, inner lobe lacking. Three dististyles, d , all terminating in blackened points; outer style curved, narrowed gradually into a long slender spine; intermediate style largest, its outer angle a long gently curved spine, the inner angle short and stout; inner style straight, narrowed gradually into a long straight blackened spine, several long pale setae at base. Aedeagus, a , long, outer end slightly curved, apex a very small hook.

Holotype. ♂, Bar, Iran, June 30, 1956 (Schmid).

The species is generally similar to *Gonomyia (Idiocera) orthophallus*, n. sp., differing in hypopygial structure, especially the intermediate dististyle and the aedeagus.

Gonomyia (Idiocera) laterospina, n. sp.

General coloration gray, patterned with brown; femora yellow, tips narrowly brown; wings subhyaline, unpatterned except for the pale brown stigma, Sc_1 very long; male hypopygium with four dististyles, the outermost a narrow rod with a small blackened spine at near midlength; aedeagus with apex slightly curved, subtended by two low points.

Male. Length about 5 mm; wing about 5 mm. Rostrum gray; palpi black. Antennae black. Head obscure gray.

Pronotal scutum dark gray, laterally light yellow, scutellum yellow. Mesonotal praescutum with disk gray, with two intermediate more brownish gray longitudinal stripes, humeral and lateral borders yellowed; scutum gray, centers of lobes vaguely more darkened; scutellum grayish brown; postnotum gray. Pleura brownish gray above, lower half yellowed, the ventral part slightly darker. Halteres with stem pale, knob dark brown. Legs with coxae and trochanters yellow; femora yellow, tips narrowly brown; tibiae yellow, tips very narrowly darkened; basitarsi yellowed, remainder of tarsi brown. Wings subhyaline, stigma pale brown, inconspicuous; veins pale brown, Sc more yellowed. Macrotrichia on most longitudinal veins beyond level of origin of R_5 , lacking on R_2 , present on apices of both Anal veins. Venation: Sc_1 ending slightly beyond origin of R_5 , Sc_2 far retracted, Sc_1 nearly as long as R_5 ; distance on costa between veins R_{1+2} and R_3 about one-third to one-half the latter vein.

Abdominal tergites dark brown, sternites and hypopygium slightly paler. Male hypopygium (Fig. 3) with basistyle, b , produced into a longer outer and a small slender inner lobe. Four dististyles, d , the outermost a long nearly straight rod, its basal half stouter, at point of narrowing with a small blackened spine; second style largest, basal half slender, apically dilated into a subcircular blade that terminates in an acute spine, at base of blade with a smaller accessory projection that bears two unequal spines, the more basal one smaller; third style a long very slender nearly straight blackened spine; inner style slightly shorter, pale throughout, apex with a microscopic point. Aedeagus, a , with apex a slightly curved spine that is subtended by two low points.

Holotype. ♂, Bar, Iran, June 30, 1956 (Schmid). *Paratopotypes*. 3 ♂♂, with type.

From other regional species of *Idiocera* having the wings unpatterned except for the stigmal darkening, the present fly is most readily told by the hypopygial structure, including the four dististyles and the structure of the aedeagus. It is generally similar to *Gonomyia (Idiocera) alexanderiana* (Lackschewitz) of Albania, differing in hypopygial structure.

Gonomyia (Idiocera) orthophallus, n. sp.

Size relatively large (wing about 6 mm); thorax dark grayish brown, patterned with yellow, especially on pleura; wings subhyaline, stigma scarcely darker; *Sc* long, *Sc*₁ ending beyond one-third length of *Rs*; male hypopygium with three dististyles, the inner and outer similar to one another, their outer ends pointed; aedeagus long and straight, apex not decurved.

Male. Length about 5 mm; wing 6 mm. Rostrum and palpi black. Antennae with scape yellowed, flagellum black, the segments elongate. Front and orbits yellowed, vertex brown.

Pronotal scutum dark grayish brown, margins broadly yellow; scutellum obscure yellow. Mesonotal praescutum grayish brown with two intermediate brown stripes, lateral borders yellow; scutal lobes brown, each with two vague darker brown spots, median area anteriorly obscure yellow; scutellum obscure brownish yellow, base and a narrow central area darkened; postnotum brownish gray, sides of anterior half of mediotergite light yellow, pleurotergite light yellow above, lower third brownish gray. Pleura light yellow, propleura, dorsal mesopleura and ventral sternopleurite dark gray, meron yellow, narrowly darkened anteriorly. Halteres with stem yellow, knob brown. Legs with fore coxae light yellow, darkened basally, mid-coxae similar, the darkened part restricted, posterior coxae yellow; trochanters yellow; femora brownish yellow, tips darker; tibiae and tarsi brown. Wings subhyaline, very faintly tinted, stigma scarcely darker than the ground; veins light brown, *Sc* more yellowed. Longitudinal veins beyond general level of origin of *Rs* with long trichia, including also outer ends of both anal veins. Venation: *Sc* long, *Sc*₁ ending shortly beyond one-third *Rs*, *Sc*₁ long, about one-half *Rs*; veins *R*₁₊₂ and *R*₃ narrowly separated at costal border; *m-cu* about its own length or slightly more before the fork of *M*.

Abdomen brown. Male hypopygium (Fig. 4) with outer lobe of basistyle, *b*, large and fleshy, with long setae, inner lobe small. Three dististyles, *d*, the outer and inner generally similar in size and length, appearing as straight lobes, their pointed outer ends blackened, the amount less on the inner style; intermediate style much larger, with outer half more narrowed, at its base with a blackened point. Phallosome with the aedeagus, *a*, long and straight, apex not decurved; gonapophyses small, narrow, slightly curved outwardly, separated by a low setiferous cushion.

Holotype. ♂, Durbadam, Iran, July 3, 1956 (Schmid). *Paratypes*. ♂, Bar, Iran, June 30, 1956; ♂, Firouz Kuh, August 14, 1956 (Schmid).

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FIG. 1. *Gonomyia (Gonomyia) basilobata*, n. sp.; venation.

FIG. 2. *Gonomyia (Idiocera) curticurva*, n. sp.; male hypopygium.

FIG. 3. *Gonomyia (Idiocera) laterospina*, n. sp.; male hypopygium.

FIG. 4. *Gonomyia (Idiocera) orthophallus*, n. sp.; male hypopygium.

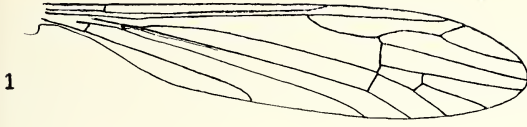
FIG. 5. *Gonomyia (Idiocera) spinulistyla*, n. sp.; male hypopygium.

FIG. 6. *Gonomyia (Gonomyia) basilobata*, n. sp.; male hypopygium.

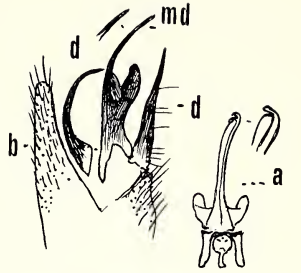
FIG. 7. *Gonomyia (Gonomyia) elburzensis*, n. sp.; male hypopygium.

FIG. 8. *Gonomyia (Gonomyia) oxybeles*, n. sp.; male hypopygium.

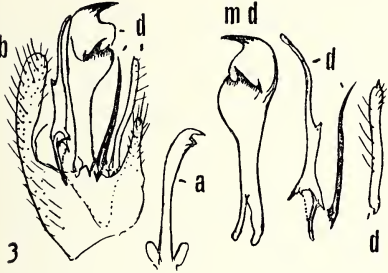
(Symbols: Male hypopygium—*a*, aedeagus; *b*, basistyle; *d*, dististyles; *id*, inner dististyle; *md*, middle dististyle; *p*, phallosome; *t*, 9th tergite).



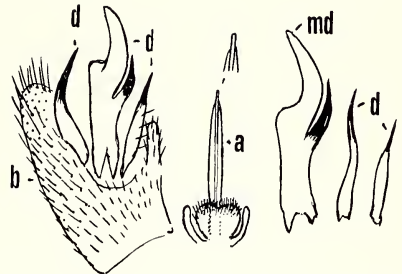
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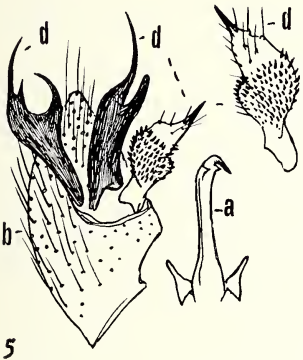
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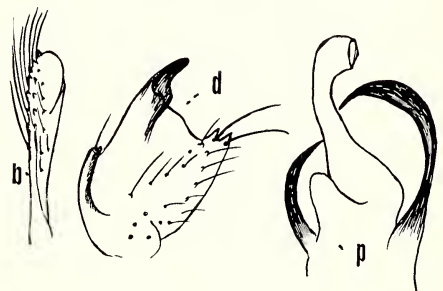
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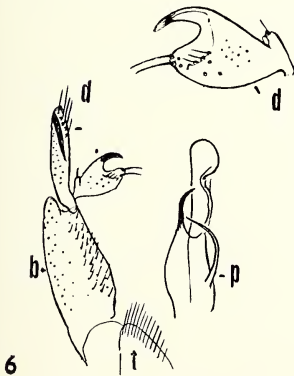
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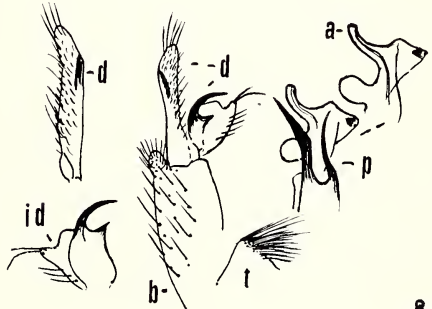
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6



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The present fly is most readily distinguished from generally similar regional species by hypopygial characters, especially the straight slender aedeagus and the conformation of the three dististyles. Such similar regional species include *Gonomyia (Idiocera) displosa* Alexander and *G. (I.) phallostena* Alexander, both from Kashmir, all differing among themselves in hypopygial structure.

Gonomyia (Idiocera) spinulistyla, n. sp.

General coloration of mesonotum brownish gray, praescutum with two longitudinal brown stripes; pleura brownish black with a whitened longitudinal stripe; knob of halteres black; femora yellow with a narrow pale brown nearly terminal darkening; wings whitened, with a restricted dark brown pattern beyond the cord; veins R_{1+2} and R_3 contiguous at margin closing the cell; male hypopygium with three dististyles, the inner one distinctive; apex of aedeagus subtended by triangular points.

Male. Length about 6 mm; wing 5 mm. Rostrum and palpi black. Antennae broken. Head above gray, extensively light yellow posteriorly.

Mesonotal praescutum light gray with two longitudinal brown stripes that are narrower than the median interspaces; scutum brownish gray, each lobe with a large brown area; scutellum brownish gray, vaguely paler medially; postnotal mediotergite dark brownish gray, pleurotergite extensively light yellow, darker behind. Pleura brownish black, ventrally sparsely pruinose with a conspicuous whitened longitudinal stripe extending from fore coxae to the abdomen, widened behind, dorsopleural region whitish yellow. Halteres long, stem yellow, knob black. Legs with fore coxae as described, middle coxae blackened basally, remainder broadly white, posterior coxae obscure yellow, bases narrowly brownish black; trochanters yellow; femora yellow with a narrow pale brown nearly terminal darkening; tibiae and basitarsi yellow, extreme tips slightly darkened, remainder of tarsi brown. Wings whitened, prearcular and costal fields light yellow; a restricted dark brown pattern including h , Sc_2 and base of Rs , tip of Sc_1 , stigma, and a more extensive apical area chiefly in cell R_1 , the center of the marking with a whitened spot; other darkened seams over cord, including $m-cu$, and at arculus; veins brownish yellow, clearer yellow in the costal field, dark brown in the patterned areas. Venation: Sc long, ending nearly opposite midlength of Rs , Sc_2 retracted, placed shortly before Rs ; R_{1+2} and R_3 confluent or contiguous at margin closing cell R_1 ; vein R_1 strongly upcurved on outer third; $m-cu$ about one and one-half times its length before fork of M .

Abdominal tergites dark brown, incisures vaguely paler, sternites lighter brown. Male hypopygium (Fig. 5) with three dististyles, d , outer style expanded outwardly, divided into two major spines, the outer one long and slender with a smaller basal spinule, inner spine shorter, strongly curved; intermediate style bifid at apex into a long slender spine and a shorter spur; inner style distinctive, short and compact, terminating in a small spine, the base of style with very numerous blackened spinules. Aedeagus, a , curved at apex, at base subtended on either side by a small triangular point.

Holotype. ♂, Bar, Iran, June 30, 1956 (Schmid). *Paratopotype*, a fragmentary ♂, mounted on slide.

Regional species that are generally similar to the present fly include *Gonomyia (Idiocera) jucunda* Loew, *G. (I.) punctata* (Lackschewitz) and *G. (I.) schrenki* Mik, all differing among themselves in hypopygial structure, especially the dististyles.

Gonomyia (Gonomyia) basilobata, n. sp.

Rostrum light yellow; palpi and antennae black; mesonotal praescutum with disk dark brown, lateral margins light yellow, pleura yellow, striped longitudinally with pale

brown; wings with stigma slightly infuscated; male hypopygium with a small lobe at base of inner dististyle; phallosome with a single blackened apophysis, the second one entirely pale, apex of aedeagus obtusely rounded.

Male. Length about 5-5.5 mm; wing 4.5-5 mm. Rostrum light yellow; palpi black. Antennae brownish black, pedicel more intensely darkened. Head gray.

Prothorax light yellow, darker on sides. Mesonotal praescutum with disk dark brown, interspaces not or scarcely differentiated, humeral and lateral regions light yellow; scutum with lobes blackened, pruinose, posterior angles slightly reddened, median area yellow; scutellum brown, posterior border narrowly more darkened; postnotal mediotergite gray, sides yellow; pleurotergite yellowed. Pleura yellow, striped with pale brown, the dorsal area narrower and poorly delimited, sternal darkening more extensive. Halteres with stem pale yellow, knob brown. Legs with coxae pale brown, middle pair more yellowed; trochanters yellow; remainder of legs brown. Wings (Fig. 1) weakly darkened, stigma slightly infuscated, large; veins medium brown. Venation: Sc_1 ending shortly beyond origin of R_s ; R_{2+3+4} long, gently arcuated; $m-cu$ slightly before or beyond $m-cu$.

Abdomen brown, hypopygium slightly more yellowed. Male hypopygium (Fig. 6) with outer dististyle, d , narrow, apical flange elongate; inner style with dorsal spine stout, at base of style with a small lobe tipped with a strong seta. Phallosome, p , with two gonapophyses, one blackened, the more slender lower spine entirely pale; apex of aedeagus obtusely rounded.

Holotype. ♂, Mishgin, Iran, August 21, 1956 (Schmid). *Paratypes.* ♂, Bar, Iran, June 30, 1956; ♂, Durbadam, Iran, July 3, 1956 (Schmid).

The present fly is most readily distinguished from other generally similar regional species by the structure of the inner dististyle, with the reduced basal tubercle, and the single blackened gonapophysis of the phallosome. The genotype of *Gonomyia, tenella* (Meigen), has the inner dististyle generally similar but the phallosome has both gonapophyses blackened and the apex of the aedeagus different.

Gonomyia (Gonomyia) elburzensis, n. sp.

General coloration of thorax yellow, praescutum with disk dark brown, scutal lobes and mediotergite brown, pleura yellow, restrictedly patterned with brown; legs light brown; male hypopygium with gonapophyses unequal, both heavily blackened, terminating in slender spines, apex of aedeagus short and obtuse.

Male. Length about 4.5-4.6 mm; wing 5-5.3 mm. Rostrum, palpi and antennae brownish black. Head gray.

Prothorax clear light yellow. Mesonotal praescutum with disk dark brown, the interspaces concolorous with the stripes, lateral borders clear light yellow; scutal lobes dark brown, median region light yellow, narrowly darkened behind; scutellum light yellow; mediotergite brown, anterolateral portions and the pleurotergite light yellow. Pleura chiefly light yellow, including the dorsopleural membrane; ventral sternopleurite and a small area on lower anepisternum brown. Halteres with stem light yellow, apex of knob brown. Legs with fore coxae weakly darkened, remaining coxae light yellow; trochanters brownish yellow; remainder of legs light brown. Wings subhyaline, stigma not indicated; veins pale brown. Venation: Sc_1 ending about opposite one-fourth to one-fifth R_s ; $m-cu$ at fork of M .

Abdominal tergites brown, incisures pale; sternites light yellow medially and on extreme

margins, sublateral areas narrowly brown. Male hypopygium (Fig. 7) with lobe of basistyle, *b*, elongate, the apical glabrous flange elongate, outer setae long. Dististyle, *d*, about as shown; outer basal lobe long and slender, tipped with a single long seta; rostral prolongation short, the two modified setae elongate; summit of style blackened. Phallosome, *p*, with both gonapophyses blackened and extended into slender spines; apex of aedeagus short and obtuse, almost rounded.

Holotype. ♂, Lius, Iran, 2,200 meters, September 14, 1955 (Schmid). *Paratopotype*. ♂, pinned with type. *Paratypes*, ♂, Waliabad, Iran, September 24, 1956; ♂, Nandeh, Iran, June 10, 1956 (Schmid).

The most similar regional species include *Gonomyia* (*Gonomyia*) *tenella* (Meigen), Europe, *G. (G.) chalaza* Alexander, Pakistan, and some others, all differing in hypopygial details, particularly in the dististyles and phallosome.

Gonomyia (*Gonomyia*) **oxybeles**, n. sp.

Size large (wing over 6 mm); rostrum light yellow, palpi and antennae black; thoracic dorsum grayish brown and yellow, pleura conspicuously patterned with brown; wings light brown, stigma very pale, *Sc*₁ ending shortly beyond origin of *Rs*, cell *R*₃ large; male hypopygium with outer lobe of basistyle small; outer dististyle with lateral blade slightly darkened, lateral spine of inner dististyle with a small point at base; phallosome distinctive, especially the aedeagus beyond the gonapophyses.

Male. Length about 6.5 mm; wing 6.2 mm. *Female*. Length about 7.5 mm; wing 6.5 mm. Rostrum light yellow; palpi black. Antennae black; flagellar segments long-oval. Head light gray.

Pronotum light yellow, sides of scutum darkened. Mesonotal praescutum with disk chiefly dark gray, stripes margined with brown, sides broadly light yellow; scutum yellow, anterior and mesal parts of lobes dark brown, posterior ends yellowed; scutellum yellow; postnotal mediotergite dark brown medially, sides yellow, pleurotergite yellow, above and below vaguely margined with brown. Pleura chiefly light yellow, patterned with light brown, including a narrow stripe on propleura and mesopleura, ventral sternopleurite more extensively darkened. Halteres with stem light yellow, knob brown. Legs with coxae and trochanters yellow; remainder of legs broken. Wings very light brown, prearcular and costal fields light yellow, stigma very pale brown; veins pale brown, *Sc* yellow. Venation: *Sc*₁ ending shortly beyond origin of *Rs*, in type about opposite one-fifth the length of vein; cell *R*₃ large; *m-cu* varying slightly in position, from before to beyond the fork of *M*.

Abdomen dark brown, lateral borders of tergites yellowed, the posterior margins more narrowly so. Male hypopygium (Fig. 8) with outer lobe of basistyle, *b*, small. Outer dististyle, *d*, a straight blade, outer lateral margin slightly darkened; inner style, *id*, with outer spine large, slightly curved, with a small acute point at base; setae of rostral lobe long. Phallosome, *p*, distinctive, with two unequal black apophyses; aedeagus, *a*, distinctive, with a flattened rounded lobe near base and a larger outer lobe that bears a small darkened point or short spine at outer end, distal end of aedeagus bent at a strong angle, as shown.

Holotype. ♂, Mughan, Iran, June 20, 1956 (Schmid). *Allotopotype*. ♀, pinned with type. *Paratopotype*. ♀, pinned with types.

The present fly is similar to *Gonomyia* (*Gonomyia*) *sibyna* Alexander, of Sikkim and Assam, differing most evidently in hypopygial structure, especially the inner dististyle and phallosome.

DISTRIBUTIONAL RECORDS

Gonomyia (Idiocera) similior Alexander

- Gonomyia (Idiocera) similior* Alexander; Ann. Mag. Nat. Hist. (12)9: 50-51; 1956.
Eastern Europe; southwestern Asia (Afghanistan, type).
Iran: Bagerabad, June 10, 1956; Kiakola, May 22, 1956; Persepolis, May 2, 1956;
Quattekas, 1800 meters, September 19, 1955; Tegan, July 5, 1956 (all Schmid).

Gonomyia (Gonomyia) abbreviata Loew

- Gonomyia abbreviata* Loew; Besch. Europ. Diptera, 3: 58; 1873.
Gonomyia abbreviata de Meijere; Tijd. v. Ent., 63: 84, fig. 84 (venation, ♂ hyp); 1920.
Gonomyia (Lipophleps) abbreviata Edwards, Trans. Soc. Brit. Ent., 5: 112, pl. 5,
fig. 16 (wing); 1938.
Gonomyia abbreviata Lackschewitz; Ann. naturhist. Mus. Wien; 50: 60, fig. 9, p. 57,
wing; 1940.
Europe.
Iran: Ardehjan, September 9 and 11, 1956 (Schmid).